

I CLAIM:

1. A method of treating mammalian disease conditions that are hereditary, degenerative, debilitating, fatal or undesirable, comprising the steps of:

5 culturing a supply of myogenic cells that are normal, genetically transduced or phenotypically converted, the myogenic cells comprising myoblasts, myotubes, young muscle fibers and converted cell types;

10 administering a therapeutically effective dosage of an immunosuppressant to the host; and

thereafter selecting and administering from said supply a therapeutically effective dose of myogenic cells or cells converted from myogenic cells to the host,

5 whereby tissue/organ size, shape and/or function are improved and/or the disease condition(s) are prevented, alleviated or annihilated.

20 2. The method of claim 1 in which treatment of the disease condition(s) is not limited to the usage of the mechanical electrical or physical properties of said myogenic cells, but includes the usage of biochemicals secreted/released.

25 3. The method of claim 1 in which myoblast therapy is used to treat neuromuscular diseases, cancer, Type II diabetes mellitus, cardiomyopathy, bone/cartilage degeneration, hemophilia B, anemia, human growth hormone deficiency and any other hereditary, degenerative, 30 debilitating, fatal and /or undesirable disease conditions or malfunction.

35 4. The method of claim 1 wherein the converted cell types include but are not limited to osteoblasts and chondrocytes.

5. A method for controlling cell fusion, comprising the step of:

increasing the concentration of large chondroitin-6-sulfate proteoglycan in an amount sufficient to exceed the endogenous level of large chondroitin-6-sulfate proteoglycan.

6. The method of claim 5 wherein the concentration of large chondroitin-6-sulfate proteoglycan is increased in a cell culture medium.

7. The method of claim 5 wherein the concentration of large chondroitin-6-sulfate proteoglycan is increased in a medium for transfer into a patient or host.

8. The method of claim 5 wherein the concentration of large chondroitin-6-sulfate proteoglycan is approximately

9. A method for controlling the size, shape or consistency of human body parts, comprising the steps of: culturing billions or more myoblasts from mammals; and

reintroducing the myoblasts and/or their physical, genetic cell derivatives into the mammal body parts to augment the size, shape, consistency, structure, biochemistry and/or function.

10. The method of claim 9, further including the steps of mixing myoblasts and cultured fat cells in appropriate proportions and transferring the mixture into one or more body parts to produce the desired size, shape, or consistency, and/or function.

11. A cloned cell line derived from a culture of genetically normal human or animal myoblasts, said cloned cell line being characterized as lacking or mildly expressing MHC-I antigens.

12. A cloned cell line derived from a culture of myogenic cells which are genetically/pototypically altered or have been transduced with a foreign gene, or are heterokaryons resulted from controlled cell fusion, the cloned cell line being characterized as lacking or mildly expressing MHC-I antigens.

13. The use of the cloned cell lines in Claims 11 and 12 in cell transplantation to treat debilitating, fatal, hereditary degenerative or undesirable conditions of mammals including human.

14. An automated cell processor capable of producing at a single time enormously large quantities of functional myogenic cells, normal or transformed, comprising:

- an intake system for processing biopsies of human or animal tissues/cells;
- a means for controlling the time for processing the tissues;
- a means for controlling the composition of the culture medium for maintaining cell growth;
- a means for controlling the growing conditions for the cells;
- a means for culturing the cells;
- a means for controlling cell fusion;
- a means for harvesting the cells; and
- a means for packaging the cells.

15. The automated cell processor of claim 14 wherein the quantity of the myogenic cells is approximately greater than 100 billion.

16. A method for producing a genetically normal child from a Duchenne female carrier, comprising the steps of:

- fertilizing in vitro an ovum of a Duchenne carrier with a sperm of her choice;

fertilizing in vitro an ovum of a genetically normal female with a sperm of the same man;

blastomere recombination of the two fertilized eggs;  
culturing the resultant embryo into the blastocyst

stage; and

implanting the blastocyst into the uterus of the Duchenne carrier rendered pseudopregnant with human gonadotropin.

17. A method for producing cardiomyocytes capable of proliferation, comprising the steps of:

mixing cardiomyocytes and normal myoblasts in culture in amounts and proportions sufficient to achieve natural or controlled cell fusion; and

selecting and then cloning cardiomyocytes that are capable of proliferation.

18. The method of claim 17, including the step of transferring the proliferating cardiomyocytes into a patient or host to treat cardiomyopathy or other heart diseases.

19. The method of claim 1 wherein the myogenic cells comprise skeletal, smooth, and cardiac cells in origin.

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